

ARTICLE

Prevention strategies for adolescent depression

Cheryl Bennett, Rhys Bevan Jones & Daniel Smith

Cheryl Bennett is a trainee in general practice at the University Hospital of Wales, Cardiff and Vale University Health Board.

Rhys Bevan Jones is a clinical research fellow at the child and adolescent psychiatry section, Cardiff University. He has a research interest in the early detection, prevention and management of depression in adolescents and young adults. **Daniel Smith** is a reader and an honorary consultant psychiatrist at the University of Glasgow, with a research interest in the early detection and management of mood disorders in adolescents and young adults.

Correspondence Dr Cheryl Bennett, Cardiff University, 142 Jim Driscoll Way, Cardiff CF11 7JR, UK. Email: cheryl.bennett@doctors.org.uk

SUMMARY

Depression is missed more often in adolescents than in adults, partly because they present with symptoms different from those in adults and because many do not seek help. Early detection or the delay of onset can have a significant effect on a young person's development and social functioning. We briefly discuss diagnosis and screening instruments before presenting the wide range of educational and psychological preventive approaches developed for adolescent depression. Many of the latter are based on the cognitive-behavioural or interpersonal therapy models. We consider how clinicians might use the current evidence base to identify and prevent depression in adolescents, and outline the principles of management of the disorder.

LEARNING OBJECTIVES

- Identify signs and symptoms of adolescent depression and recognise the difficulties in making a diagnosis.
- Recognise the risk factors for adolescent depression.
- Appreciate the aims and theoretical concepts of prevention strategies for adolescent depression.

DECLARATION OF INTEREST

None.

Adolescent depression is a serious and relatively common mood disorder with an estimated 1-year prevalence of between 4 and 5% (Thapar 2012). The prevention of depression in young people is important not only because it is distressing for the individual, family and carers, but because it is also associated with considerable social, educational and occupational impairment as well as poor physical health (Thapar 2012). It is a major risk factor for self-harm and completed suicide (Gould 2003). In fact, suicide is the second-to-third leading cause of death in adolescents (Windfuhr 2008; Centers for Disease Control and Prevention 2009).

All adolescents with risk factors for depression (see below) who experience depression during adolescence have an increased risk of illness recurrence during early adulthood (Lewinsohn 2000). There has been growing interest in the use

of educational and psychological interventions in clinics, schools and communities to prevent adolescent depression (Merry 2011). Some of the topics covered in this article will be of particular interest for child and adolescent psychiatrists, but this is an area which crosses the divide between adolescent and adult services and so should be of interest to all psychiatrists.

Diagnosis of depression in adolescence

In ICD-10 (World Health Organization 1992) the diagnostic criteria for depression in adolescents are the same as the criteria for adults (Box 1). However, adolescent depression can be a difficult diagnosis to make because young people may present with different symptoms from adults. DSM-5 (American Psychiatric Association 2013) extends the diagnostic criteria to include irritable

BOX 1 ICD-10 criteria for depressive episode

Duration of symptoms: at least 2 weeks

Core symptoms

- Depressed mood for most of the day and almost every day
- Loss of interest or pleasure in activities
- Decreased energy or increased fatigability

Other symptoms

- Loss of confidence or self-esteem
- Unreasonable feelings of self-reproach or excessive inappropriate guilt
- Recurrent thoughts of death or suicide, or any suicidal behaviour
- Diminished ability to think or concentrate
- Change in psychomotor activity, with agitation or retardation
- Sleep disturbance
- Change in appetite with corresponding weight change

At least four of these symptoms must be present to diagnose a mild depressive episode, six to diagnose a moderate depressive episode or eight symptoms for a severe depressive episode.

(World Health Organization 1992)

mood as a core depressive symptom in children and adolescents. Adolescent depression might also present with non-specific problems such as decline in school attendance or performance, behaviour change or substance misuse and physical difficulties (Leaf 1996). These factors, along with significant mood reactivity and fluctuating symptoms, may explain why depression in this age group is missed more often than in adults (Thapar 2012). Furthermore, adolescents with depressive symptoms frequently do not seek help or are not referred to appropriate specialist services (Potter 2012).

The National Institute for Health and Care Excellence (NICE) recommends that assessment for adolescent depression should be considered in those at high risk and should involve the parent or caregiver as well as the young person. Assessments should include the potential for comorbidities and an assessment of suicide risk. Social, educational and family information (particularly the parent's mental health) should also be asked about. This should include information on the quality of interpersonal relationships, both between the patient and family members and with friends and peers (National Institute for Health and Clinical Excellence 2005). Family interactions

and relationships may alter the presentation of depression, as may cultural differences. It is also useful to gain information from other sources, such as teachers (Zuckerbrot 2007).

A large number of screening and diagnostic instruments for adolescent depression have been developed that might be helpful in clinical practice. These are detailed in Table 1. NICE suggests the use of semi-structured interview tools to assist with diagnosis rather than relying on self-report measures, as slightly less than half of individuals identified by computerised screening tools alone are likely to be true cases (Costello 2005; National Institute for Health and Clinical Excellence 2005). Many screening tools ask solely about symptoms in the past 1 or 2 weeks, whereas interviews can take a longer-term view (Stice 2010).

Prevention strategies

The prevention of adolescent depression can be addressed at several different levels (Box 2). Primary prevention strategies attempt to avert the occurrence of depression in a currently unaffected population. Secondary prevention is focused on the early detection and treatment of depression, and tertiary prevention attempts to minimise disability arising from depression (Merry 2004a).

TABLE 1 Screening instruments for adolescent depression^a

Instrument	Content	Number of items	Age range, years
Beck Depression Inventory-II (BDI-II) (Beck 1996)	Symptoms in DSM-5 over 2 weeks	21	13 and over
Depression Self-Rating Scale for Children (DSRSC) (Birlleson 1978)	Symptoms over the past week	18	8–14
Center for Epidemiologic Studies Depression Scale (CES-D) (Eaton 2004)	Perception of frequency of symptoms in past week	20	8 and over
Children's Depression Inventory (CDI) ^b (Kovacs 1985)	Presence and severity of depressive symptoms over past 2 weeks	27	7–17
Children's Depression Inventory-2 (CDI-2) (Kovacs 2004)	Has new items on core aspects	28 (CDI-2 short has 12 items)	7–17
Kutcher Adolescent Depression Scale (KADS) (Brooks 2004)	Frequency of symptoms over past week	11	12–17
Mood and Feelings Questionnaire (MFQ) (Angold 1987)	Frequency of feelings and behaviour of the child in the past 2 weeks	32 (Short Mood and Feeling Questionnaire (SMFQ) has 11 items)	8–18
Patient Health Questionnaire (PHQ) (Spitzer 1999)	Frequency of symptoms in DSM-5 criteria for depression (anhedonia and depressed mood in PHQ-2)	2 or 9, depending on version	13 and over
Reynolds Adolescent Depression Scale (RADS) (Reynolds 1987)	Frequency of dysphoric mood, anhedonia, negative self-evaluation and somatic symptoms	30	12–18
Reynolds Adolescent Depression Scale-2 (RADS-2) (Reynolds 1988)	As for RADS, standardised on a new sample with wider age range	30 (RADS short form has 10 items)	11–20
Strengths and Difficulties Questionnaire (SDQ) ^c (Goodman 1997)	Psychological attributes relating to emotions, behaviour and relationships	25 (plus 2 questions on insight into symptoms and the impairment)	3–16

a. All instruments are self-report.

b. Also has a form for parents and teachers.

c. Parent and teacher report; self-reports available for 11- to 16-year-olds.

BOX 2 Classification of preventive interventions**Primary prevention**

Avert occurrence of depression in an unaffected population

Secondary prevention

Early detection and treatment of depression

Tertiary prevention

Minimise disability arising from depression

Universal interventions

Broad, generic programmes (e.g. in schools or communities)

Possible advantages

- Less stigmatising – avoids the need to identify and focus on those at high risk
- Benefits more young people, including those missed through screening

Possible disadvantages

- Difficult to implement
- Variable in quality and outcome

Targeted interventions

Target those at high risk for depression

Possible advantages

- Greater treatment effects
- More cost-effective – better use of limited resources

Possible disadvantages

- More arrangements needed to identify individuals and deliver intervention
- Stigmatisation and increased anxiety
- May treat unnecessarily those who may not develop depression

Selective programmes

Target high-risk groups (e.g. offspring of parents with depression)

Indicated programme

Target those with subthreshold depressive symptoms

Educational interventions

Impart information (e.g. symptoms of depression, aetiology, management). Examples of programmes:

- *beyondblue*
- Adolescent Depression Awareness Program.

Psychological interventions

Based on a cognitive-behavioural therapy or interpersonal therapy model, or a mixture of the two. Examples of programmes:

- Penn Resiliency Program
- Problem Solving for Life
- Resourceful Adolescent Program
- Interpersonal Therapy-Adolescent Skills Training.

Universal interventions usually adopt broad programmes within schools or communities, whereas targeted interventions are for individuals at high risk of depression. We know that the risk of depression is increased three to four times in adolescents who have a parent with depression and that other risk factors include female gender, social isolation, poverty and family breakdown (Thapar 2012). Adolescents with poor coping mechanisms, a negative cognitive style and low self-esteem are also thought to be more vulnerable (Gladstone 2011). Selective targeted programmes treat high-risk groups such as adolescent offspring of parents with depression (Clarke 2001; Garber 2009). Indicated targeted programmes treat adolescents with depressive symptoms just below the threshold required for a formal diagnosis of major depression, as they are also at risk of a full-blown depressive episode (Lewinsohn 1998).

In general, preventive interventions are either educational or psychological, although there are overlaps in approaches. Educational interventions provide information (e.g. through literature or lectures) in particular on the presentation of depression, causal factors and general self-management approaches (e.g. lifestyle changes). They aim to help adolescents recognise symptoms in themselves and in their peers (Merry 2011).

However, the majority of studies of prevention strategies for adolescent depression involve a psychological intervention. Many of these

programmes are based on a cognitive-behavioural therapy (CBT) model, some on an interpersonal therapy (IPT) model and others are a mixture of the two. Many aim to equip adolescents with skills to manage stress, promote positive self-esteem and help with social interaction (summarised in online Table DS1) (Gillham 2006; Gladstone 2011).

Educational interventions

Although educational interventions may increase self-awareness and reporting of depressive symptoms, overall it appears that they may not be as effective (and cost-effective) as hoped because they require a high degree of organisation and investment by schools; and the results, at least in the short term, are modest.

beyondblue

A large universal randomised controlled trial (RCT) in Australia evaluated an educational intervention called *beyondblue*. This 3-year intervention consisted of four components. First, the curriculum was modified so that classroom sessions were introduced to focus on problem-solving, social skills, resilient thinking style and coping strategies. Second, the school structure and culture were reorganised to build supportive environments, which aimed to improve social interaction. Third, pathways were put in place to improve access to support and professional services within the school and the wider community.

Finally, community forums provided information for students, families and staff members to help identify problems and seek help if needed.

Although the ratings of 'school climate' changed significantly (e.g. quality of teacher–student relationships, participation in activities and safety), there were no significant changes in depressive symptoms, risk or protective factors (Sawyer 2010).

Adolescent Depression Awareness Program

On a smaller scale, the Adolescent Depression Awareness Program (ADAP) comprises 3 h of educational material over two or three sessions delivered by psychiatrists and psychiatric nurses to schoolchildren as part of a health class. A range of teaching modalities are used, including lectures, videos, homework and interactive group activities. The overall message is that depression – which results from a complex interaction between psychosocial and biological factors – is a treatable medical illness.

Swartz *et al* (2010) tested pupils before they received any educational material and 6 weeks post-delivery and found a significant improvement in mean test scores, suggesting that pupils were engaged in the teaching and had an increased awareness of depression, at least in the short term.

Psychological interventions

Group CBT

Interventions such as group CBT and group IPT have an obvious appeal in terms of the possibility of delivering high-quality psychological treatments cost-effectively but, in general, assessments of these approaches suggest that they need to be developed further before widespread implementation.

Penn Resiliency Program

One of the most studied group CBT interventions is the Penn Resiliency Program (PRP), which is a 12-week psychological programme based on CBT approaches, designed for use in groups of 10- to 14-year-olds (Table DS1). The contents are manualised and delivered by trained child psychologists, social workers, counsellors and school nurses, with homework included. Students are taught how to identify links between their thoughts and feelings of depression and anxiety and how to generate alternative thoughts and explanations, especially to negative events, and dispute hopelessness expectations. The programme also aims to teach students conflict management skills, assertiveness, negotiation, social skills and decision-making.

Three separate assessments of this programme have had very mixed results (Cardemil 2002, 2007; Roberts 2004; Gillham 2006). One study found a significant difference in depression symptoms at 3 and 6 months, which persisted over 2 years (Cardemil 2002, 2007), whereas another found a significant decrease in depressive symptoms in girls only (Gillham 2006). A separate study found no effect on depression symptoms (Roberts 2004). The range of outcomes between studies could be attributed to the different settings (rural and urban schools, primary care) and countries (USA and Australia), range of participants (young people of various social classes and ethnicities) and professionals, the use of different assessment scales and the adaptation of the programme by some researchers.

Problem Solving For Life

Similarly, the Problem Solving For Life (PSFL) programme teaches students to identify and challenge negative or irrational thoughts and to develop a positive orientation towards problem-solving and optimistic thinking styles. This comprises eight weekly sessions which fit into a school term, and is delivered by teachers. A large universal study of PSFL reported no significant difference in the incidence of depressive disorder over 4 years (Spence 2005), although for participants who had depressive symptoms at the start of the study there was an initial decrease in measures of depression, negative problem-solving orientation, avoidant problem-solving, and an increase in problem-solving skills (Spence 2003).

Adolescents of parents with depression

Group CBT has also been used as a targeted intervention in adolescents who have a parent with depression. Clarke *et al* (2001) focused their cognitive restructuring therapy on challenging negative beliefs and found there was a reduction in diagnosis of major depressive disorder at 12 months. However, Garber *et al* (2009) found that the benefits of a standard CBT programme did not extend to children who had a parent with current depression.

Group IPT

Resourceful Adolescent Program

The Resourceful Adolescent Program (RAP) is a universal approach based on both CBT and IPT. It consists of 11 manual-based sessions delivered by trained teachers, focusing on issues such as self-esteem, negative cognitions, stress management, cognitive restructuring, problem-solving, accessing

support and use of humour (Merry 2004b; Shochet 2004; Rivet-Duval 2011). An RCT in two schools with students allocated to either the RAP-Kiwi programme (a New Zealand adaptation) or a class focused on 'having fun' reported a significant difference in depression scores at 18 months post intervention. The students found it reasonably enjoyable and useful (Merry 2004b).

RAP has also been implemented in Mauritian schools, and it was found that it was acceptable to students and could be implemented in a diverse cultural setting. The programme resulted in students having more positive self-esteem and coping skills at 6-month follow-up, compared with waiting-list controls. The authors also found significant reductions in hopelessness and lower scores on the Reynolds Adolescent Depression Scale-2 post-intervention, but these were not significant at 6 months (Rivet-Duval 2011).

Interpersonal Therapy-Adolescent Skills Training

Interpersonal Therapy-Adolescent Skills Training (IPT-AST) delivers IPT-based treatment over eight 90-minute sessions to groups of adolescents with depressive symptoms. The groups discuss personal feelings and interpersonal reactions, and learn various communication and interpersonal strategies to apply in their daily lives to help resolve interpersonal conflict and promote positive relationships. Students who received the therapy had a greater decrease in depressive symptoms, diagnoses of depression and better overall functioning than a comparator group receiving school counselling options at 6 months (Young 2010).

Coping with Stress course

The Coping with Stress course is psycho-educational and cognitive-behavioural in its approach and aims to help individuals to deal with stress primarily (Clarke 1995). The course involves monitoring mood, identifying activating events, revising negative beliefs, recognising the links between events, beliefs and consequences, solving problems and coping with stressful events. This has been compared with IPT-AST and a control group by randomly allocating high-risk adolescents to each group. The Coping with Stress course had eight weekly 90-minute sessions of guidance and structured activities delivered by clinical psychologists and a workbook for homework. Both the Coping with Stress and the IPT-AST courses were more effective in adolescents with more initial depressive symptoms, but the effects were not maintained at 6-month follow-up (Horowitz 2007).

Bibliotherapy and multimedia programmes

Bibliotherapy

Bibliotherapy – the use of selected written material as a form of psychological therapy – is often based on CBT models, and can be used solely or as an adjuvant to another psychological therapy. Stice *et al* (2010) compared bibliotherapy (based on a 'self-help' book focusing mainly on examples of cognitive restructuring) with a programme of group CBT within an RCT and found that depressive symptoms improved in the group CBT sample. Bibliotherapy may be more useful for adolescents at risk of depression or with subsyndromal depression when resources are limited.

Multimedia programmes

Multimedia and internet programmes based on behavioural activation and CBT approaches for depression are being developed but are as yet at a very early stage of evaluation (Van Voorhees 2008). A systematic review of available computerised and online CBT for preventing and treating depression noted that adolescents reported a reduction in symptoms and an improvement in behaviour, self-esteem and negative cognitions (Richardson 2010).

A cluster RCT in Australia of the YouthMood Project, a universal programme based on online CBT, reported significantly lower levels of anxiety in participants than in waiting-list controls, but only males had reductions in depressive symptoms at 6-month follow-up (Calear 2009).

Interventions are becoming increasingly interactive, and Merry *et al* (2012) have developed a computerised gaming CBT intervention (SPARX, www.sparx.org.nz), whereby the young person chooses an avatar and explores a fantasy world. The authors have evaluated this in primary healthcare sites in New Zealand and found that it reduced depressive symptoms in help-seeking adolescents as much as treatment as usual.

The use of effective, accessible and acceptable multimedia and internet programmes for adolescent depression has the potential to be cost-effective and to address issues such as autonomy, treatment flexibility and waiting times, as well as helping to mobilise social support for the individual. However, trials of these interventions will require careful design and evaluation before they can be considered safe and effective at the population level.

Family interventions

Given that so many of the risk factors for adolescent depression are modifiable within the family

environment (social isolation, family breakdown, poor coping mechanisms and low self-esteem), interventions which involve family members may hold promise. Programmes have been developed to teach cognitive-behavioural skills to parents with depression and their children, with the aim of enhancing effective parenting and improving the coping skills of the adolescents. An RCT of such a programme showed that it reduced anxiety and depressive symptoms in children at 12 months (Compas 2009). Beardslee *et al* (2003) found that family interventions are more effective if the material is directly related to the everyday lives of family members.

In practice it would be difficult for a widespread intervention to be flexible enough to encourage sufficient parental attendance (Shochet 2004; Young 2010). However, an awareness of an adolescent's social background and risk factors, particularly if they have a parent with depression, can help target resources for secondary prevention.

Bringing it all together: intervention studies and future directions

Overall, there is hope that interventions can be developed to prevent, or at least delay, the onset of adolescent depression. A meta-analysis by the US Institute of Medicine has concluded that only targeted prevention programmes were effective in preventing onset of adolescent depression (Gladstone 2011; Thapar 2012). However, a Cochrane review found some evidence to suggest that universal prevention programmes were also effective in preventing onset of depression within 1 year, when compared with no intervention (Merry 2011).

Although the evidence for long-term effectiveness is limited, the reduction of risk factors for depression (e.g. low self-esteem, negative thinking styles (Merry 2004b)) and delaying the onset of depression until after adolescence is particularly important given that this is a key period for academic achievement and the development of interpersonal skills and relationships. A recent Cochrane review concluded that the evidence base for treating patients with established depressive disorder which has started during adolescence is at present limited and in need of further development, but highlighted the potential for psychological therapy and/or antidepressant medications (Cox 2012).

Findings from these reviews are encouraging, but several questions remain unanswered. There is considerable variability in the interventions, particularly in terms of the components, settings and participants. Generalisability is an important

issue, and only a few studies were conducted in low- and middle-income countries. There is also a risk of bias given the lack of allocation concealment and masking in several studies, and there are concerns about the lack of difference when compared with placebo or attention controlled studies (Jones 2012). There is also a lack of well-researched educational interventions compared with psychological interventions, and further studies could examine whether booster sessions, following prevention programmes showing short-term benefits, might help provide sustained effects.

A major challenge is to deliver effective interventions where resources are limited, especially given the current economic climate. Several trained teachers or healthcare workers and sufficient time would be needed to implement universal programmes in schools and communities, and a great deal of resources would be required to identify individuals as well as deliver targeted programmes. Online multimedia packages may be a more cost-effective alternative, but ideally as an adjunct given the importance of the therapeutic relationship.

There is a need for large-scale, well-designed studies with adequate follow-up to evaluate these interventions, and multicentre and international collaborations could be developed. Furthermore, as young people may need to be aware that they are at 'high risk' for targeted interventions to be implemented, further research is required into disclosure and its effects, including possible increased anxiety and associated stigma. Future research could also focus more on other barriers to implementation.

Principles of management in adolescent depression

Treatment

Treatment of adolescent depression may be considered part of secondary and tertiary prevention (Merry 2004a), and should not be approached in the same way as treatment of depression in adults (Thapar 2012) (Box 3). NICE recommend that children and young people with moderate to severe depression be offered a specific psychological therapy such as individual CBT, IPT or family therapy. This is considered first-line treatment for moderate to severe adolescent depression. There is also a need to target psychosocial stressors and adversities.

There is controversy with respect to using antidepressants in those under the age of 18, and NICE do not recommend the use of antidepressants unless this is in conjunction with psychological therapy and adverse effects and mental state are

BOX 3 Treatment take-home messages

- 1 Identification of depression in youth at high risk.
- 2 Assessment using reliable depression scales and DSM and/or ICD criteria, patient and third-party histories. Assess for parental depression.
- 3 Active monitoring and treatment:
 - patient and family psychoeducation
 - referral to cognitive-behavioural therapy or interpersonal therapy if available
 - coordination of care with mental health specialists
 - appropriate referrals and links with the community (especially school)
 - safety planning for suicide risk reduction
 - arrange treatment for parent if needed
 - consider antidepressant medication alongside psychological therapy.

closely monitored (National Institute for Health and Clinical Excellence 2005).

Supportive relationships

Attempts should be made to engage and develop a supportive relationship with the adolescent and their family. The adolescent, family and carers should be given appropriate information about depression, which includes its aetiology, expected course, possible benefits and side-effects of treatment options, and strategies for the prevention and early intervention of recurrent episodes (Zuckerbrot 2007). They should also be made aware of self-help groups. Any mental health difficulties experienced by the parent(s) may need to be treated in parallel (National Institute for Health and Clinical Excellence 2005).

Risk of suicide

If an adolescent is thought to be at risk of suicide, the family and carers need to be informed so that they can monitor for risk factors and remove potential means of harm. It is important to attempt to engage the adolescent further in treatment and provide them with a supportive environment, with planned follow-up as well as emergency contacts (Zuckerbrot 2007).

Improved communication

It is recognised that improved communication between primary and secondary care and training of health professionals could go some way to improving outcomes (Windfuhr 2008; Foreman 2001). NICE suggest that child and adolescent mental health services should develop systems

for identifying and treating adolescents at risk and those who are symptomatic. These should be developed through working with social care, schools and other community organisations (National Institute for Health and Clinical Excellence 2005).

Conclusions

The identification of adolescents at risk of developing depression is the first step in preventing it, and the presence of risk factors and/or subsyndromal symptoms are key to this. Many efforts have been made to develop prevention programmes, largely based on CBT and IPT, which have evidence for treating mental health disorders in adults.

Targeted programmes tend to be more effective than universal programmes, and might be more cost-effective if implemented in schools or communities, although the latter approach may be less stigmatising and helps more young people. The evidence for the benefits of programmes is variable and many are short term. However, even if the onset of depression is delayed for a short period, it may have a significant effect on the development of the young person, especially on educational, family and social aspects.

It is vital that these adolescents are identified early and treated appropriately to allow them to fulfil their potential. It is also important to ensure they have access to services and to find ways of engaging them to look after their own mental health and seek help when required, so as to help prevent adolescent depression and limit its consequences.

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MCQ answers

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MCQs

Select the single best option for each question stem

1 Which of the following is a core symptom in the ICD-10 diagnostic criteria for depression in adolescence:

- a sleep disturbance
- b weight gain
- c reduced energy
- d excessive guilt
- e irritability.

2 Secondary prevention aims to:

- a detect and treat a disorder early
- b remove known risk factors
- c reduce the incidence of a disorder

- d reduce disability of a disorder
- e treat side-effects of treatment.

3 Which of the following is the main focus of IPT:

- a decision-making skills
- b academic achievement
- c relationships
- d cognitive styles
- e coping mechanisms.

4 Which of the following is not a risk factor for adolescent depression:

- a low self-esteem
- b poverty

- c parental depression
- d presence of subthreshold depressive symptoms
- e male gender.

5 What is the first-line management of moderate/severe adolescent depression according to NICE guidelines:

- a psychological therapy
- b pharmacological therapy alone
- c watchful waiting
- d admission to a psychiatric intensive care unit
- e provide educational material only.